



Seasonal Migrational Timing and Distribution of Broad and Humpback Whitefish and Least Cisco from Whitefish Lake



Introduction

Whitefish Lake is a shallow (<6 feet) 16,000-acre lake located southwest of Aniak on a tributary to the Kuskokwim River. Subsistence fishermen from as far away as Bethel travel to Whitefish Lake during the fall to harvest whitefish. Local residents concerned about a decline in numbers and size of subsistence harvested whitefish proposed regulations that were adopted by the Board of Fisheries. Because of the lack of biological information, this cooperative study was initiated to gather abundance and age information on humpback whitefish *Coregonus pidschian*, and broad whitefish *C. nasus* found in the lake.



Subsistence Harvest

Methods

- ▶ Weir operated September 25 – October 10, 2001 and June 16 – September 28, 2002 and May 5 – October 10, 2003
- ▶ Fish tagged to determine movement and areas of subsistence harvest in the Kuskokwim River.
- ▶ Otoliths and scales collected for aging.
- ▶ Strontium analysis of otoliths for anadromy.
- ▶ Gonadosomatic index data collected for sexual maturity.
- ▶ Monitored subsistence fishermen for harvest.

Results

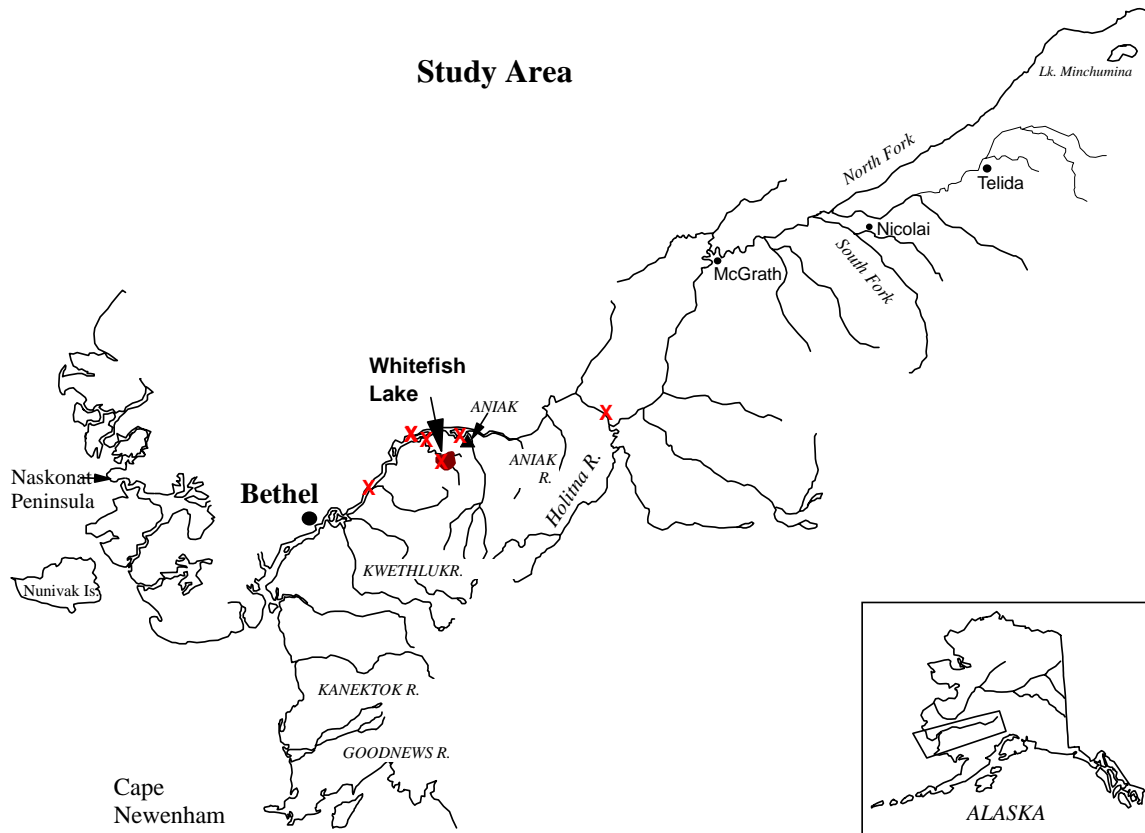
- ▶ Whitefish Lake is seasonally used by whitefish.
- ▶ Subsistence harvest occurs from mid summer through freeze up.
- ▶ Humpback whitefish ages ranged between 7 and 21, while broad whitefish ranged up to 7 years. Least cisco ages ranged up to 29 years.
- ▶ Strontium analysis of otoliths suggests humpback, broad, and least cisco enter brackish water as juveniles.
- ▶ Recaptures suggest fidelity to the lake as a summer feeding area.
- ▶ Tag recoveries have included fish moving up to possible spawning areas.



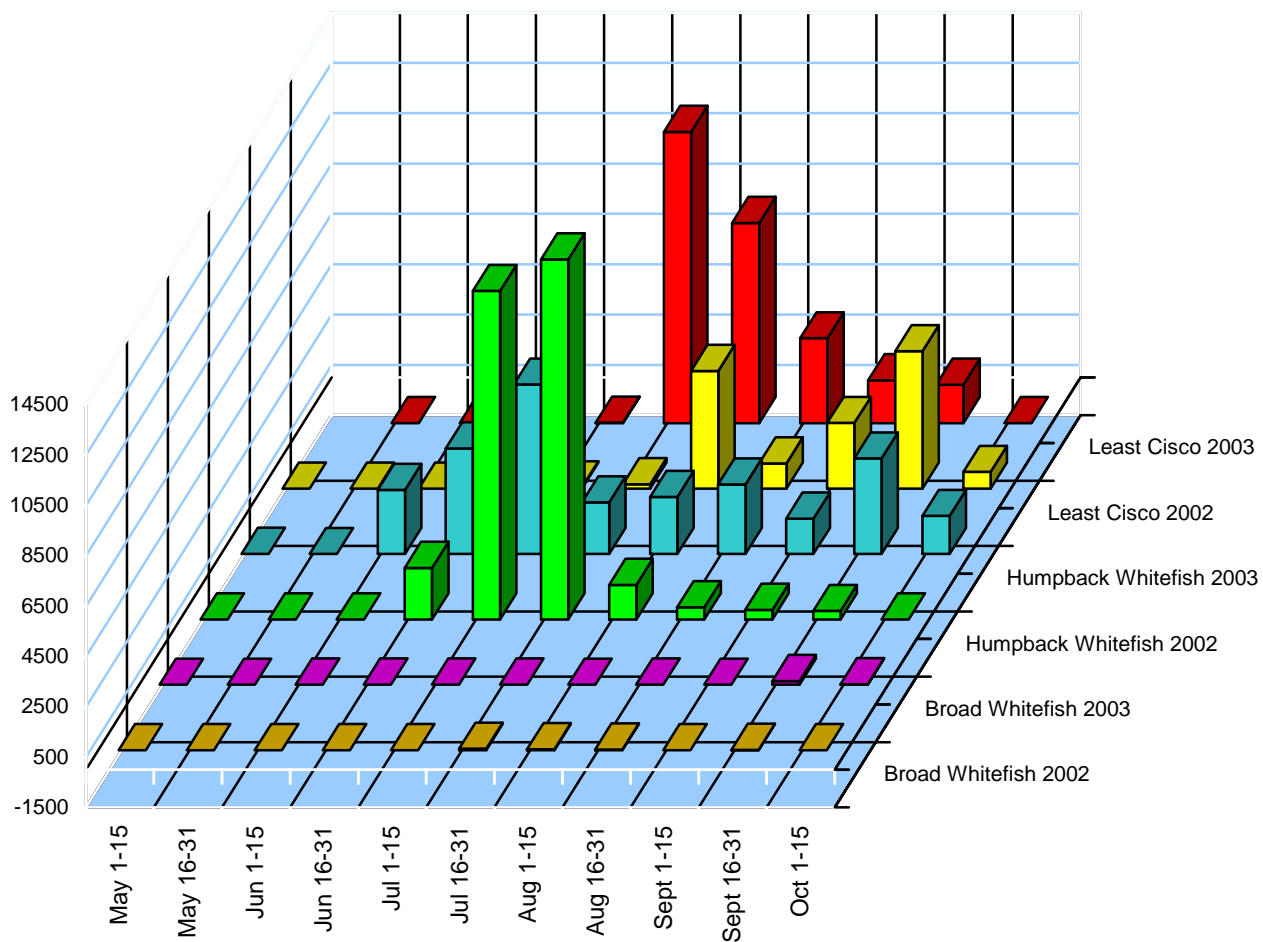
Least cisco



Whitefish Lake Weir



Fish Passage Out Of Whitefish Lake





Broad whitefish

Future Studies

- ▶ Use telemetry to delineate spawning areas.
- ▶ Monitor subsistence harvests in Kuskokwim River to determine harvest areas.